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AFRICAN HOUSEHOLD SURVEY CAPABILITY PROGRAMME: SELECTED ISSUES AND FUTURE DEVELOPMENT

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APPENDIX I: SUMMARY OF NATIONAL HOUSEHOLD SURVEYS CONDUCTED IN AHSCP COUNTRIES IN 1986 AND 1987

INTRODUCTION

1. The African Household Survey Capability Programme (AHSCP), which is a regional component of the global National Household Survey Capability Programme (NHSCP), was established in 1978 to improve the availability of continuing, timely and integrated data in African countries. These data are required to ensure the adequate preparation and monitoring of national and regional plans, policies and programmes.

2. The regional team of AHSCP at the ECA provides expert advice and assistance to countries in the African region in the development, implementation and dissemination of household surveys, and is intended to strengthen the permanent household survey capability in each country.

3. At the beginning of 1988, there were three regional advisers based in the Economic Commission for Africa as follows:
(a) one financed by the United Nations Development Programme (UNDP) under the integrated project entitled Statistical Development Programme for Africa (SDPA);
(b) one provided by the International Labour Office for assistance with surveys of the economically active population and of household income and expenditure; and
(c) the third one provided by the Government of the Federal Government of Germany for assistance with data processing of household surveys.

4. The regional advisory services are available on request to all countries in the African region and are not restricted only to countries involved in the AHSCP, although priority is given to the latter.

5. As at the end of 1987, twenty countries are recorded as participating in the AHSCP as follows:
Benin, Botswana, Cameroon, Congo, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mali, Morocco, Nigeria, Rwanda, Senegal, Sierra Leone, Sudan, Tanzania, Zambia and Zimbabwe. Project proposals have also been formulated recently for Cote d'Ivoire which is already carrying out a series of Living Standards Measurement Surveys (LSMS) with the support of the World Bank.

6. In addition, countries such as Cape Verde, Djibouti, Mauritius, Seychelles, Swaziland, Tunisia, Uganda and Zaire were planning or undertaking household surveys without having continuous survey programmes within the framework of AHSCP.

7. Appendix 1 lists household surveys conducted by AHSCP countries since the last Joint Conference in March 1986.

8. The main purpose of this paper is to outline some of the issues which have been perceived in recent years under the AHSCP. Three main areas are considered in this paper:

(a) Problems existing in various African countries;

(b) The coordination of international aid and whether that aid is appropriate; and

(c) Whether assistance by AHSCP advisers addresses the long term capabilities of each country or merely solves short term problems.

PROBLEMS AFFECTING HOUSEHOLD SURVEYS IN SELECTED COUNTRIES

9. Some African countries experience problems in developing and implementing household surveys. For ease of presentation, this paper considers the problems being encountered at each phase of survey development and implementation.

Project formulation

10. Statistical agencies are not always fully informed as to user needs and priorities, and therefore may have some difficulty in establishing the need for and content of a household survey programme.

11. It is important that statistical agencies keep themselves informed of, and indeed anticipate, user needs and priorities. Some countries in the African region achieve this through national statistical advisory committees. These types of committees may not be successful, especially if the committee members do not represent a fair balance of user types, or if some users are unable to articulate their needs. Nevertheless, in general, some formal committee mechanism is recommended.

12. At the same time, statisticians need to develop the skills to anticipate and interpret the data requirements of users in their country through less formal methods, and this is made easier if statisticians establish a close working relationship with their potential users. This relationship may be encouraged by having statistical officers "out-posted" to major government ministries.

13. Knowledge of the current or anticipated needs of users will facilitate the formulation of the most efficient statistical programme for a given country, and this programme would normally include some household surveys.

14. It has been noted that some countries attempt a survey programme which is too ambitious, and eventually must abandon all or part of that programme. Some countries also over-burden particular surveys with too many questions.

15. The ECA can assist in the formulation of household survey programmes. During 1986 and 1987, the ECA, in conjunction with the NHSCP Central Coordinating Unit of the United Nations Statistical Office (UNSO), Food and Agricultural Organisation

(FAO) and International Labour Office (ILO), assisted in the formulation of household survey programmes in several countries. During these missions, knowledge of national priorities and user needs was essential, and required visits to selected major users.

Finance

16. Many African countries have problems in financing their programme of household surveys. In fact, several of the countries for which AHSCP project proposals were formulated some years ago have not commenced the programme of surveys due to lack of funding. These include Congo, Egypt, Senegal, Sudan and Tanzania.

17. Limited foreign currency within the country may prevent the purchase of new vehicles, spare parts, computer equipment and so on, and foreign assistance is frequently sought. The UNECA is not a UN funding agency and cannot assist in this field, other than in recommending various funding sources.

18. Some countries have also reported that funds in local currency are not available for salaries, stationery and other survey consumables. One would expect that a government should be able to pay for local costs if the survey programme is important enough to be given high priority. In addition, international donor agencies do not generally provide funds for local costs, although in exceptional circumstances (such as severe economic situations), local costs may be funded.

Human resources

19. Another problem faced by many countries in Africa relates to the availability of human resources with adequate knowledge, experience and skill to design, implement and analyse household surveys.

20. Human resources are required as follows:

(a) Staff to plan and manage the project;

(b) Statisticians able to understand user needs and to transform these into a workable set of concepts and questionnaires;

(c) Operations specialists, including sampling specialists, to organise and supervise the data collection phase of the survey;

(d) Data processing system analysts to efficiently convert the raw collected data into the specified set of tabulations, and

(e) Subject matter specialists to analyse and interpret the results for dissemination.

21. These sorts of skills are not always available in African countries. Many countries use international funding for overseas training, but in a number of cases the newly trained staff members leave for the private sector. Many trained statisticians are also transferred or promoted to other areas within the public service without fully using their skills.

22. Local training should be encouraged wherever possible, and part-time training is particularly suitable so that the trainee acquires practical experience while being trained.

23. Many countries have statisticians with excellent paper qualifications, but only limited experience. There is a need to encourage young graduates to obtain more on-the-job experience instead of seeking post-graduate studies.

24. The UNECA regional advisory service assists with solutions to these problems in several ways. Firstly, it provides short (one to two weeks) working group meetings and training courses with a view to expanding on the skills and experience of African statisticians, data processors, etc.

25. Secondly, the regional advisers impart some of their experience and skills to national staff during problem solving missions. Missions especially concentrating on training matters are also undertaken.

26. Consultants are also used occasionally for these tasks, although it must be added that consultancy funds are limited.

27. Despite these various forms of assistance in training, it is felt that the AHSCP could provide more assistance in this field. This point is dealt with in more detail later in this paper.

Project planning and management

28. Some countries have difficulties in adequately planning and managing their household survey programmes. Attention needs to be given to the scheduling of activities, allocation of available resources, setting of milestones, project monitoring, and so on.

29. The UNECA also assists in minimising this problem. Working group meetings are organised periodically on organisation, content and methodology of household surveys. Seven of such meetings have been held in the 1980's. In November 1987, with the financial support of the Government of the Federal Republic of Germany, the UNECA carried out separate Working Group meetings for francophone and anglophone countries on household surveys (with special emphasis on data processing).

30. As appropriate, the regional advisers also provide guidance on project planning and management during their missions.

Questionnaire content and design

31. Some countries have requested UNECA assistance in the design of survey questionnaires. This is a difficult task requiring skill and experience which (as mentioned) is not always available in the country. Particular problems have been met in questionnaires which are too long or too complex, with questions which are not clear or concise, and also with questionnaires which are difficult to process.

32. It is necessary to ensure that survey questionnaires are easy to complete and process, and that they contain the minimum set of questions to satisfy user needs.

Data processing

33. Data processing has often been the cause of substantial delays in the release of household survey results. These problems may have arisen because of inadequacies in questionnaire design, project planning, availability of resources, improper coding, incompatibilities in computer equipment, etc.

34. Whatever the cause, it is recommended that data processing must be planned and designed early in a household survey project. The most timely survey results now being produced in Africa are the result of having a tested and operational data processing system available before data collection started.

35. As already mentioned, the UNECA recently carried out working group meetings specifically aimed at the data processing of household surveys. The UNECA and ILO also have regional advisers who assist in this aspect of household survey operations.

Tabulation, analysis and report writing

36. A further problem encountered by some countries in Africa relates to the experience and knowledge to extract and disseminate information from their household surveys.

37. The choice of tables and the appropriate analysis of the data in these tables has been an area in which the UNECA has provided assistance.

38. In addition, the skills required for determining the content and structure of a survey report, the ability to express the report in a language which is rarely the mother tongue of the writer, and the finance to print the report have all been identified as problems in the output phase of household survey programmes.

Statistical integration

39. Finally under the heading of general country problems, there is the major issue of statistical integration. Household surveys

should be integrated in at least two ways - with other household surveys in the programme and with other information sources in the country.

40. The African Household Survey Capability Programme aims to promote the integration of survey concepts, classifications, sampling frames, etc in order that the results from each survey can be more easily related to other household surveys in the survey programme.

41. Many countries in Africa have adopted this approach and have appreciated the savings in resources as well as the improvements for users.

42. At the same time, household surveys should also be seen as part of the overall information set for each country. The statistical programme needs to be developed in such a way that the results of different statistical collections and compilations can be related one to another. This is achieved through standardised concepts, definitions, statistical units, classifications, etc.

43. The AHSCP advisory team attempts to promote this approach during their missions.

INTERNATIONAL AID

44. The second major topic considered in this paper concerns the coordination and appropriateness of international aid in the field of household surveys.

45. A diverse number of countries and international agencies give aid for the development and implementation of household surveys in African countries. There seems to be a need to ensure that this aid is well coordinated within each country.

46. For example, one country in southern Africa has received bilateral computing assistance for use as part of its programme of surveys, but has found that the machines provided in that aid have not been compatible with computers already available in the country or those provided by other sources. As a result, the survey data processing and tabulation in that country has been suspended until the incompatibility has been overcome.

47. In another example, the World Bank has implemented a series of Living Standard Measurement Surveys (LSMS) in several countries, and Ghana has incorporated such a survey into their Ghana Household Survey Programme. In 1986, the Ghana plan was to undertake the LSMS survey for one year then to carry out more traditional AHSCP surveys before, perhaps, either returning to the LSMS approach or repeating the cycle. The survey programme was likely to be amended during implementation.

48. At the more general level, the overall degree of coordination and integration between the LSMS programme and the AHSCP programme has yet to be determined, perhaps at an international expert meeting.

PERFORMANCE OF THE AHSCP ADVISORY SERVICE

49. The final major issue raised in this paper relates to whether the AHSCP advisory service is merely solving short term problems in each country or whether it is addressing the long term capability for carrying out household surveys.

50. As explained earlier, the AHSCP provides advisory services and consultancies covering a wide range of topics. This service is available on request to any country in the African region, and naturally only tends to be used when a problem arises.

51. It is believed that this "problem-solving" service has been useful, and will probably continue to be useful and desirable to overcome short term deficiencies in the region.

52. In addition, as also previously mentioned, the AHSCP carries out a number of working group meetings, workshops and a similar meetings which involve a training component.

53. However, it is considered that the long term capabilities in each country will be more effectively addressed if a more intensive training programme was undertaken.

54. It is suggested that the NHSCP and AHSCP programmes should provide more in-country and sub-regional training covering the various aspects of household survey programmes. It is proposed that UNECA sets up training modules and programmes initially for use by regional advisers and later for repeated training within each country by local staff. These training courses should aim at increasing the number of local staff with the knowledge and skills to undertake household surveys in their country.

CONCLUSION

55. This paper has attempted to list a number of issues and problem areas relating to the development of the AHSCP. Efforts will be made to assist countries which have encountered difficulties in order to enable them to start or re-activate their household survey programmes. It is expected that two additional countries may join AHSCP each year during the period 1988-1991, and assistance should also be provided to such countries.

56. It should be pointed out that some countries such as Mauritius, Seychelles, Swaziland and Tunisia already undertake household surveys at fairly regular intervals and could be considered as participating in the AHSCP provided that the issue of integration indicated in paragraphs 39 to 43 above receives adequate treatment. The ECA household surveys advisory team

would be prepared to assist these countries in looking into this matter.

57. The role of training in the development of the NHSCP and AHSCP programmes has been emphasised in order to build up effectively the capability of countries in planning and conducting household surveys, as well as in the processing, analysis and dissemination of the results.

SUMMARY OF NATIONAL HOUSEHOLD SURVEYS CONDUCTED IN AFSCP COUNTRIES IN 1986 AND 1987

(As at December 1987)

NOTE: The following summaries are based on information available to the ECA Statistics Division, and may be out of date. Countries have been previously requested to keep the ECA and UNSO informed on progress in the survey programmes, but some data may be out of date. If so, countries are requested to advise the ECA Statistics Division of any additional or amended information.

COUNTRY	SURVEY(a)	YEAR	CURRENT STATUS
Benin	HIES	1986-87	Being processed.
Botswana	HIES	1985-86	Results expected 1988.
	DEMOG	1987-88	Under collection.
Cote d'Ivoire	LSMS	On-going	Some results available.
Egypt	LFS	On-going	Not known.
Ghana	LSMS	1987-88	Under collection.
Kenya	LFS	1986 Urban	Preliminary results produced.
Lesotho	LFS	1985-86	Being processed.
	HIES	1986-87	Being processed.
Morocco	DEMOG/HLTH	1987	Preliminary results published.
Mali	DEMOG/HLTH	1987	Results expected shortly.
Nigeria	DEMOG	On-going	1984/85 report latest available
	LFS	On-going	1985 results published.
	HIES	1985-86	Not known.
Senegal	DEMOG/HLTH	1986	Preliminary report published.
Zambia	LFS	1st phase,1986	Report under review.
	LFS/DEMOG	2nd phase,1987	Being processed.
Zimbabwe	HIES	1985-86	Tabulation in progress.
	LFS	1986	Being processed.
	LIT	1986	Report expected shortly.

(a) Survey titles are summarised as follows -
- LFS ... Labour Force Survey
- HIES .. Household Income and Expenditure Survey
- DEMOG . Demographic Survey
- HLTH .. Health or Nutrition Survey
- LIT ... Literacy Survey
- LSMS .. Living Standards Measurement Survey (World Bank)

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PRIORITIES FOR IMPROVING BASIC ECONOMIC STATISTICS

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PRIORITIES FOR IMPROVING BASIC ECONOMIC STATISTICS

Introduction

1. In many African countries, the availability of basic economic statistics falls far short of what is desirable or even essential for rational policy making and economic management. This is evidenced, for example, by the absence of up-to-date estimates of economic growth and of the basic data required to make such estimates quickly and reliably.

2. There are perhaps two complementary ways of defining the term "basic economic statistics". From the point of view of the average user, basic economic statistics might be defined as those which he or she could reasonably expect to find readily available in up-to-date publications (such as a national statistical bulletin or abstract). Such figures should provide an appreciation of the main structure and recent development of the economy. The second way, from the statistician's point of view, is to define basic economic statistics as those basic data collection programmes that are needed to generate the published information and to meet users' requirements at a basic level.

3. In this paper, the requirements for basic economic statistics are briefly outlined and the implications for their collection discussed with particular reference to business surveys. A distinction is made between the collection of data to measure up-to-date developments and that required for structural analysis. The methodology and hence the basic data requirements for measuring economic growth is discussed and some conclusions drawn.

Requirements for basic economic statistics

1. In these times of economic difficulty, the needs of those responsible for managing economic recovery and/or adjustment programmes are perhaps the most important. Often these programmes will be concerned with the generation of foreign exchange, to pay for essential imports and to repay loans; with the production and financing of export commodities; with pricing and exchange rate policies; with food production and agro-industries; and with the operations of public enterprises and of the government itself. The basic data required to monitor developments in these fields will mainly be in the form of time series and concern the formal sector of the economy.

5. More wide ranging is the suggested list of statistical indicators intended for monitoring Africa's Priority Programme for Economic Recovery. This has been set out in another document (E/ECA/PSD.5/14). Many of these indicators would come under the heading of basic economic statistics.

6. These requirements are mainly for time-series data. They include particularly those variables which play a key role in the economy and which are highly volatile and difficult to predict. A certain amount of structural data is also necessary. However, more detailed data, such as input/output tables for example, may be considered as outside the scope of basic statistics, as they are only needed for more sophisticated and specialised analysis.

7. Of course, every country will have different needs and priorities according to its particular situation. It is however possible to make a list of major requirements which might apply to most countries. These requirements are discussed briefly below under the following main headings:

a) prices and exchange rates
b) major productive activities
c) employment and earnings; the economically active population
d) government revenue and expenditure
e) external trade and balance of payments
f) money and banking; public sector borrowing; debt
g) national accounts (basic level)
h) living standards (household consumption)

This list of course excludes basic data on the demographic, social and environmental conditions of a country, which complement the economic data.

8. **Prices and exchange rates:** Consumer prices are probably the first priority for any statistical office. Apart from monthly or quarterly indices for each major group, it is useful to have annual averages for a detailed list of commodities. Agricultural prices are also most important, particularly in the context of monitoring food supplies, as well as for evaluating agricultural production. Export and import prices and exchange rates should be available. Other prices associated with production, such as building costs, are also important. Wage rates might be included in this category.

9. **Major productive activities:** In almost all African countries agriculture is the most important activity. It is also sensitive to climatic conditions, pricing policies, etc. Regular up-to-date estimates of crop production are therefore crucial for many purposes. Figures on livestock are also needed, although

they will usually be less crucial than those for major crops. Data on forestry and fishery production will also be needed if these activities are important. In the case of industrial enterprises, the economic health of the largest firms are of prime importance to the whole economy from the point of view of employment, export earnings, government revenue, etc. The monitoring of the output of these large producers must therefore have high priority. Construction activity can be particularly volatile and affects employment, incomes and hence the rest of the economy. Basic data on energy supplies are required. Then there are hotel and other tourism statistics; air, sea and land transport; communications; insurance and other services of economic importance. In all these sectors, measures of profitability might be considered important for policy purposes.

10. **Employment and earnings; the economically active population:** Although in many countries "formal" employment is only open to a minority, there are several reasons for giving priority to its measurement. One is that it provides an easily measured indicator of formal sector activity. As mentioned above, the formal sector plays a crucial role in the economy, particularly in urban areas. Regular figures of employment in government service are especially useful. Together with assumptions on productivity, these figures are needed for estimating the output of government services which is part of gdp. Summary data, derived from population censuses or surveys of the economically active population, on the structure of the labour force might also be considered as a basic statistical requirement.

11. Government revenue and expenditure: The IMF system of Government Finance Statistics (GFS) provides a framework for presenting data on government revenue and expenditure. Summaries of this, in time series form, would be included as basic economic statistics.

12. **External trade and balance of payments:** Again, annual summaries of external trade and the balance of payments must be considered as basic. Monthly data on major exports are likely to be needed. Imports are usually classified by main SITC sections. Much more useful for economic analysis is a classification by broad economic categories (BEC), although this requires adaptation to the particular circumstances of each country.

13. **Money and banking; public sector borrowing; debt:** These data, together with details of interest rates, will be considered indispensable by the authorities concerned with monetary and financial management, and provide essential background information for the general economist.

14. **National accounts (basic level):** Estimates of value added by kind of activity, at current and at constant prices, provide an overview of the structure and development of the economy. Many users, particularly macro-economic planners, would also consider estimates of the expenditure components of gdp to be essential. When balance of payments data are added, the four main summary accounts of the nation (as defined in the UN System of National Accounts) can be obtained, showing national income, saving and net borrowing from abroad.

15. **Living standards (household consumption):** Finally in the field of economic statistics, data on the distribution and structure of household consumption might be included as basic. This would provide information on the living standards of the population at large and could be used to analyse the effects of policy options on those standards.

The timeliness of the data

16. When examining the development of the economy over time, most users want data that is as up-to-date as possible. They want to know what is happening now, and preferably what will happen next year. What happened up to the year before last is of relatively little interest, particularly if the user knows that situation will have changed substantially since then.

17. Thus there is little value in monthly time series if the data are not available within six months at the outside. There is very little value in quarterly figures if they take more than a year to produce. Ideally, regular data of this type should be available before the end of the period following the one to which they relate.

18. In some countries, the need for regular up-to-date data is met by means of a "tableau de bord". This is a quarterly or six-monthly set of data designed to measure the economic pulse. In addition to actual figures it may include short-term projections based on surveys of business intentions etc.

19. On the other hand, good structural data can have a more lasting value and may very well be relevant for several years after the reference period. Rather than repeating expensive data collection exercises too frequently, projecting the benchmark data in line with known control totals will often produce estimates which are perfectly adequate for most purposes. Of course, there comes a time - perhaps after five years, depending on the situation - when the structural data becomes out of date and a new survey becomes essential. A reasonable balance between too much data and too little is often hard to achieve.

Implications for data collection

20. In the field of basic economic statistics, therefore, two types of data can be distinguished. The first type measures development over time: indicators in the form of monthly, quarterly or annual time series. The second type describes structural characteristics. The distinction can be seen most clearly in the data required to produce a consumer price index. Structural data is needed to obtain the weights, while regular price surveys are required to calculate the price relatives.

21. There are considerable dangers in trying to collect both types of data at once, especially in the context of business surveys. Undertaking a series of enquiries that are both too complex and too frequent often leads to failure, especially in terms of the need for timely economic indicators.

22. The problem with business enquiries, in any country, is that few (if any) businessmen are prepared to devote their time to the completion of government returns, especially if these are complex, difficult to understand or require more than a few minutes to complete. The same is regrettably often the case with government departments, unless there is very strong backing from the top. Realistically, therefore, statistical offices must make their requirements for data as simple as possible, especially if the survey is to be repeated at frequent intervals. Otherwise the problem of non-response will become intractable. To be reasonably reliable, a business survey must achieve a response rate of at least 80 per cent.

Short-period enquiries

23. For the purpose of obtaining up-to-date indicators of activity in the formal sector, monthly or quarterly surveys are necessary. Even a six-monthly survey might be suitable particularly for obtaining data on intentions. The most effective return is one that simply requests information on such items as

- total number of employees,
- total vacancies,
- volume of production or sales,
- total value of sales,
- total capital expenditure,
- value of orders, and
- investment intentions.

Such simple data can be collected without much difficulty in many countries by telephone. This method is well worth considering, especially when postal delays are likely. It should also be possible to collect simple data from the informal sector at regular intervals on a sample basis.

24. The temptation to seek any breakdown should be strongly resisted in these surveys. The more questions there are, the more likely the respondent will be unable to answer quickly; response will suffer and so will the reliability of the results. The data processing also becomes more complicated. It is also necessary to keep the sample size in line with the resources available, to ensure that the data is produced according to a strict timetable. The frequency of the survey must also be carefully considered: monthly figures may not be much more useful than quarterly data, but to compile them involves three times as much work.

25. In these surveys the objective is to identify changes in the level of activity, etc and not to measure the level itself. The surveys must therefore be designed and processed in a way that ensures comparability from period to period. More comprehensive benchmark surveys are required to establish levels from time to time. These may result in a need to adjust the estimates based on the short-period surveys.

Annual and benchmark surveys

26. At least in the formal sector, it is accepted practice for businesses to produce commercial accounts on an annual basis. In many francophone countries this is done according to the OCAM accounting plan, and detailed returns are made for both fiscal (tax) and statistical purposes. This kind of link with another administrative procedure is clearly advantageous, but there may still be problems, particularly in processing the returns. In other countries, businesses are required to make separate returns to the statistical office.

27. Although the returns often require considerable detail, very little of this detail is actually published or used, if indeed it is ever tabulated. Again, the returns should be designed so that the most essential information can be obtained while at the same time making it as easy as possible for the form filler.

28. Processing detailed business surveys has long been a serious bottleneck. In many countries the only realistic method has been hand tabulation. The advent of powerful micro-computers should ease the situation. Even so, there is often an unwillingness on the part of the statistician to get involved in the processing as well as a shortage of skilled programmers. A statistician who is willing and able to prepare the processing system himself is worth two or three that are not. It is recommended that no newly designed return is dispatched until the processing system is ready to operate. Tables should be produced on the basis of a small pilot before the return is finalised for use. This procedure will enable redundant information to be identified and eliminated from the return before the survey begins; it will also ensure that the results are not delayed for want of programmes.

29. It is more difficult to obtain data from the informal sector. for which there is unlikely to be a complete register of establishments and for which conventional business surveys do not yield any results. Fortunately, outside agriculture, this sector does not generally have the same impact on the overall economy as the formal sector and is usually less sensitive to external factors. It is therefore right to give priority to the formal sector first.

30. Nevertheless benchmark data on the informal sector are often needed, for example to assess the effects of developmental and other policy measures. However, it is probably better to obtain this kind of data through special studies on a relatively small scale than through large scale exercises. Because of the sensitive nature of the data, the use of large numbers of enumerators of variable quality is certain only to produce large quantities of unusable data which are quite impossible to make sense of. It is far better to carry out a small study in closely controlled conditions, using a very few highly-skilled enumerators, which yields no more data then the statistician in charge can scrutinise, edit and analyse by himself.

Business registers and stratification

31. Outside the agricultural sector, there is probably no more important factor in the growth or decline of an economy than the starting up or closing down of businesses. An accurate, up-to-date register, at least of formal sector businesses, is therefore fundamental to the monitoring of economic development. Such a register is also needed by other departments, for example for taxation or, in some countries, social security reasons. These departments may maintain staff whose main task is to identify businesses. It is advantageous if all departments requiring a business register co-operate to maintain it.

32. In many countries, such co-operation between departments is weak. This results in unnecessary and inefficient duplication of work. Leadership, determination and good relationships between officials at an informal level are important in bringing departments together. To maintain a good register it may be necessary to work through the provincial, district or local administrations. In some countries it may be worth initiating a special project both to set up and to maintain a complete register of businesses. But to be really effective it must have the support of all user departments, especially the revenue departments.

33. Unlike households whose size is always relatively limited, the largest business may be more than a thousand times larger

than the smallest. As there is no possibility of covering every business in every survey, stratification of businesses by size is absolutely essential. Employment size (or number of employees) is the simplest and the best general indicator of size. It does not have to be 100 per cent accurate for stratification purposes.

34. Three main strata can be envisaged. The first would contain the relatively small number of enterprises which are so large that their omission would invalidate the results of the survey. These enterprises may employ several hundred people each. The middle stratum might be the remainder of the formal sector, the precise definition of which may vary according to circumstances. These businesses might be further divided into sub-strata by size, or they might be sampled with probability proportional to size. The third main stratum would cover informal businesses and household activities, for which it is probably not possible to maintain a complete business register, just as it not possible to maintain a complete list of farmers.

Estimating economic growth

35. There is a very considerable demand for estimates of economic growth that are both timely and reliable. Usually attention is focussed on gdp and its components at constant prices. (Gdp at constant prices measures the change in the volume of production. This is not necessarily the same as changes in real income, which depend also on changes in the terms of trade.)

36. Unfortunately, however, such estimates are often unreliable and out of date. Clearly there will always be a conflict between reliability and timeliness, but there is much statistical offices could do to achieve an improvement in both, without undue cost.

37. First of all it is necessary for the statisticians concerned to drop any over-adherence to conceptual purity in the compilation of the estimates. Generally speaking, the best way to construct estimates of gdp by kind of activity at constant prices is simply to project forward base-year value added using volume indicators of gross output. This is an approximation to what is ideally required according to theory, but it is a very good approximation. It depends on a fraction of the theoretical data requirements, which are in most cases far beyond the capacities of national statistical offices to collect.

38. This method is used in most developed countries, which is why they are able to produce estimates quickly. It is precisely equivalent to the method commonly used to produce an index of industrial production (in which volume indicators are weighted by value added). It is analogous to the production of a price index, except that the result is a volume index.

39. Unfortunately, strict adherence to the theory of so-called "double deflation" has not only delayed the estimates in some countries but actually rendered them quite unreliable. This is because the method can be extremely sensitive to relatively small errors or the use of data that is not precisely appropriate. The more straightforward direct deflation of value added at current prices can also be unreliable. Any deflation should normally be applied to the total value of output so as to derive the appropriate volume indicator. These issues have been dealt with more fully in guidelines prepared for the recent ECA working group on national accounts at constant prices.

40. Once the simplified methodology is accepted as appropriate, the main problem is to identify volume indicators that are appropriate to the output of each sector and where necessary to institute simple short-period enquiries to collect the data.

41. The various types of production data have already been described in an earlier section. In the case of wholesale and retail trade, if estimates of turnover can be obtained, these can be deflated by those parts of the consumer price index that refer to items available in shops. Otherwise, it may be necessary to assume a relationship with the volume of imports and local production.

42. In the absence of production data, regular employment figures are an acceptable alternative, possibly adjusted for assumed changes in productivity. (This method is especially common for measuring activity in the service industries.) Other proxy indicators may include the volume of inputs into a process. As a last resort and for sub-sectors which are small or which for other reasons are not priority areas for data collection, a neutral assumption would be to apply the rate of growth of the population.

43. In addition to a regular programme of enquiries aimed at obtaining up-to-date indicators, attention must be given to broader and more detailed structural enquiries with which to make benchmark estimates of value added.

44. Some countries may wish to develop a system of balanced commodity flow accounts at constant prices. Such a system provides a set of integrated and consistent data from which gdp and its components can be obtained. However, this requires a high level of skill and resourses, particularly to resolve inconsistencies, and implies a level of statistical development to which very few countries in the world aspire. It should certainly not be attempted without a relatively well-developed and reliable data collection system.

Data dissemination

45. Modern information technology has opened the door to new ways of preparing data for dissemination. In particular, the use of spreadsheets on micro-computers brings many advantages. Spreadsheets combine the functions of a calculator and a typewriter with the ability to store, retrieve and amend tables. With a printer of appropriate quality, camera-ready copy can be produced from which plates can be made for printing. Even stencils can be cut with such printers, if speed and cost are more important than quality. If errors are identified they can be corrected once and for all. Typesetting errors are completely eliminated. By means of formulae, totals and percentages can be derived automatically instead of being calculated separately. Some users may prefer to receive the data on diskettes. The ability to set up computerised speadsheets should be part of every statistician's training.

Conclusion

46. Too many countries have become bogged down in over-complex business enquiry programmes which are far too ambitious given the available resources both within the statistical office and in the business community at large. The main reasons for the failure to bring out timely and reliable results are non-response and processing problems. These problems would be reduced if the returns were simplified, the number of respondents reduced by more extensive sampling, the follow-up more vigorous and processing systems prepared in advance.

47. At the same time, regular quarterly indicators of activity, even if the coverage is strictly limited, (for example, employment in major construction companies) are often scarce. A clear 2distinction needs to be made between regular enquiries designed to collect indicators such as prices, total output, employment etc and these designed to collect structural data. As long as the indicators are available (it is advisable to maintain strict regular timetables for these), there should be no obligation to collect structural data every year.

48. The priority of statistical offices should thus be to ensure a regular flow of up-to-date indicators, backed up with a series of benchmark enquiries which provide the underlying framework. The demands of potential users for additional detail, as if this involved no additional cost, should be strenuously resisted unless it is quite clear that usable data will result without overloading the return. It is better to achieve more limited goals than to fail completely through over-ambitious targets.

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POPULATION DYNAMICS IN THE CONTEXT OF SOCIO-ECONOMIC DEVELOPMENT PLANNING

I. INTRODUCTION

1. The objective of this paper is to review, briefly within the introduction, past, present and future population size, structure, and composition in Africa. Section II deals with mortality, and international migration. The interrelationships among population, socio-economic development and resources are presented in Section III. A summary and recommendations for consideration by the conference are presented at the end of the paper as Section IV. Fertility and aspects of internal migration are not dealt with as separate sections as there are specific papers on these presented to this conference.

Past, present and future population size, structure, and composition in Africa

2. Based on United Nations medium variant population estimates[1/], the total population of Africa which was 224 million in 1950, more than doubled in 30 years to reach 479 million in 1980. In another 30 years from 1980 the population in Africa will again more than double to reach 1.158 billion people by the year 2010. However, if one compares the 1950 population estimate and the projected figure for 2010, one notes that the population will have increased more than five fold during the 60 year period, if the assumptions used in the estimates and projections remain more or less unchanged. In 1988 Africa's population is estimated at about 607 million people and the figures for 1990, and 2000 are 645 million, and 871 million respectively. Africa had 11.5% of the world population in 1985 and this proportion is expected to reach 16.6% by the year 2010. Africa has the highest population growth rates in the world at 3% per annum while in other regions of the world the rates are 2.3% in Latin America, 2.2% in South Asia, 1.2% in East Asia, 1.5% in Oceania, 0.9% in North America, 0.96% in USSR, 0.3% in Europe, and 1.7% for the world as a whole. What is worth noting is that Africa is the only region whose population growth rate has continued to increase since 1950. Africa's high population growth rates are a result of the very high fertility rates--- crude birth rates of about 45 per 1000, and high but declining mortality rates---crude death rates of about 16 per 1000. Between now and 2000 there does not seem to be any hope that there will be significant decline in population growth rates, unless Maternal and Child Health (MCH) and Family Planning (FP) Programmes being currently adopted by member States are vigorously implemented.

3. The total population of only ECA member States as of mid-1988 is about 570 million. About 19% of that population is in Nigeria, the only country with over 100 million people (105.6 million). The next 7 countries that follow are estimated to have the following population as mid-1988: Egypt 50.3 million, Ethiopia 47.3 million, Zaire 32.8 million, Tanzania 25.1 million, Algeria 23.9 million, Morocco 23.6 million, and Kenya 23.4 million. Thus all these seven countries contain about 40% of the ECA member States population. Together with Nigeria, it is seen that about 59% of the population reside in 8 countries. In Cameroun, Côte d'Ivoire, Ghana, Madagascar, Mozambique, and Uganda, population ranges between 10.7 million and 17.2 million. It is noted that 13 countries

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1/ United Nations, World Population Prospects. Estimates and Projections as assessed in 1984, New York 1986.

each has the total population of 5 million or over but less than 10 million. However 20 countries each has a population of less than 5 million ranging from .7 million to 4.4 million.

4. The sex composition of a population is best described by using a sex-ratio which is defined as the number of males per 100 females. For Africa as a whole the sex ratio is about 99 at present and it is expected to remain at this level till at the end of this century. Thus there are slightly more females than males. With regard to the age structure, it is observed that 45% of the population in Africa is under 15 years old. This is the population whose needs have to be taken care of by those in the age group 15 to 64 years. This age group constitutes 52% of the total population while those over 64 years are only 3% of the total population. The median age of the population in Africa is about 17. This compares with the median ages of 20 for South Asia, 21 for Latin America, 25 for East Asia, 34 for Europe, 31 for North America, 30 for USSR and 28 for Oceania. Thus Africa has the youngest population in the world.

5. The majority of the African population (over 70%) live in rural areas. There has been a continued movement of the population from rural areas to urban areas. This has significant implications on socio-economic development on both urban and rural areas. International migration plays an important part in socio-economic development in some regions of Africa especially in Northern Africa, Southern Africa, and Western Africa. The changing attitudes and economic environment in both sending and receiving countries show that international labour migration is being reduced. The impact on sending countries will have implications on socio-economic development.

II. MORTALITY AND INTERNATIONAL MIGRATION

a) MORTALITY

6. Mortality, together with fertility and migration, is an important component of population growth in Africa. Available information suggest that mortality continued to decline in about all African countries in the recent past. However, demographers do not agree on the magnitude and size of mortality decline on the continent. Some believe that there has been a deceleration of mortality decline in a number of African countries because of economic crisis, political instability, draught and food crisis, and the outbreak of diseases like cholera, yellow fever and AIDS as well as high incidence of malaria in almost half the continent.

7. Recent estimates of mortality prepared since the previous joint conference suggest that mortality in Africa dropped only slightly. Crude death rates (CDR) though a little lower than in 1984, are still quite high compared to countries in other regions like South Asia and Europe. The range of estimates of CDR is from about 6 to 29 for Mauritius and Gambia respectively. Estimates of Infant Mortality Rates (IMR) ranged from 28 in Mauritius to 180 in Mali and Sierra Leone. Estimates of IMR are particularly important as yardstick for measuring health conditions among different countries. The estimates of life expectancy at birth are lowest for Gambia at about 35 years and highest in Mauritius

at about 70 years. The wide ranges observed in these statistics should be of great concern to us all suggesting people in Africa live under varied severe mortality conditions.

i) Mortality Measurement:

8. There are three major measures of mortality used to analyse mortality levels, patterns, trends and differentials. The three indices are CDR, IMR and e^{o}_{x}. The IMR is the most important for comparing mortality conditions among countries because it is sensitive to conditions of health of the people in various African countries and as an informative indicator since many deaths are concentrated in the first year of life. The e^{o} is the second most useful measure of mortality since it estimates average number of years to be lived by a cohort of people born at a particular year. The CDR is less used for comparative mortality analysis because of its sensitivity to population age structure.

9. The latest assessment of world population estimates and projections recorded that mortality indices reached new levels. For the period 1980-85 the crude death rate for Africa was estimated at 16 deaths per 1000 population compared to 10 for developed countries and 11 for developing countries and the world as a whole. Estimates of expectation of life at birth suggested that Africa has the lowest life span of only 49 years compared to 73 for the developed countries, 60 for the world as a whole and 57 for all developing countries. The estimates for infant mortality rates (IMR), which are important indicators of status of health of the people, also place Africa at a disadvantage. The estimates of IMR of 112 were highest for Africa compared to only 16 for developed regions and the world as a whole and developing regions at 78 and 88 respectively.

10. These estimates of mortality levels for the same period vary greatly within Africa sub-regions. The estimates of CDR were at same level of 18 for Eastern, Middle and Western Africa followed by Southern Africa at 14 and Northern Africa having the lowest estimate fixed at 12. Corresponding values of life expectancy at birth were: 47 for Eastern and Western Africa, 48 for Middle African countries, 53 for Southern Africa and Northern Africa had the highest life expectancy of 57. This variation in levels of mortality among sub-regions can also be illustrated by estimates of IMR. The highest levels of IMR were computed for Western Africa at 123 followed by Eastern, Middle, Northern and Southern Africa at 120, 117, 100 and 87 respectively.[1/] One important observation is that all the five African sub-regions lie within a narrow range of mortality as measured by any one of the three indices. This suggests that mortality still remains very high in the region.

11. Most countries in Africa have mortality patterns which suggest more unfavourable mortality conditions for males than females. These sex patterns of mortality were revealed in an analysis of life tables prepared from census data of 17 countries from Eastern, Western, Northern and Southern Africa. The results indicate that the median age at death was higher for females than males in almost all the countries.

1/ United Nations World Population Chart 1985, New York 1986.

12. The pattern of mortality in entire population as revealed from recent studies undertaken by ECA suggest that mortality patterns in African countries were generally a configuration of the North and South families of the Coale and Demeny model life tables. The census data from most sub-Saharan African countries fitted more with the North family while data from Northern African countries tended to correspond to the South model pattern of mortality.

13. African countries like other countries in developing regions have experienced mortality decline in the past two or three decades. The estimates and projections of world population prepared in 1984 confirm this. Mortality declined from high levels in 1950s to almost half by 1980s in most African countries. Between 1950-55 and 1980-85 mortality declined in terms of CDR from 27 to 16 per 1000 population. Similarly IMR also dropped significantly from about 200 to 100 infant deaths per 1000 live births during the same period. However, life expectancy at birth increased from less than 40 years in 1950-55 to almost 50 years in 1980-85. This observation suggest that Africans have not gained much from experience of mortality decline as compared to other parts of the world. However, e_o it is apparent that positive mortality changes have been observed in terms of e_o in most countries since they have gained between 10 and 20 per cent in e_o suggesting a gradual mortality decline of that magnitude.[1/]

14. Studies of mortality differentials like those of mortality patterns enable Governments directing efforts to improve health status of people affected most. Within a country mortality varies between rural and urban areas of residence, among population sub-groups classified by level of education attained, their marital status and even religious affiliation. Recent studies undertaken by ECA suggest that in Sudan, Nigeria, Kenya, Côte d'Ivoire and Senegal, mortality for children whose parents had no education was twice that for parents with education. Similarly mortality in urban areas was significantly lower than in rural areas, except for Sudan.[2/]

ii) Mortality Prospects

15. In summary therefore from estimates presented so far on mortality levels and trends it is apparent that mortality in African countries will continue to decline at a slow pace. There are presently several factors which will bring about improvement in the levels of mortality. The most important factor is that almost all African countries have recognized the importance of improving the well-being of the people through efforts to reduce high levels of mortality particularly among infants, children and mothers. This recognition is endorsed in the Kilimanjaro Programme of Action on Population in which African countries have been called upon to intensify their national programmes to reduce current high levels of infant, childhood, and maternal morbidity and mortality, especially

1/ ECA, "Mortality Levels, Patterns, Trends and Differentials in Africa" in African Population Studies Series, No. 8, Addis Ababa 1985.

2/ ECA, Infant and Childhood Mortality & Socio-economic factors in Africa, An Analysis of World Fertility Survey Data. Addis Ababa 1987.

for mothers and children in rural areas. This recommendation was further strengthened by the recommendations of the International Conference on Population (ICP) held in Mexico, in 1984.

16. For African countries to achieve the ICP target of attaining life expectancy at birth of 60 years by the year 2000 it imples that between 1980 and the year 2000 an average gain per year of about 0.75 in life expectancy at birth should be attained. The prospects for Africa to achieve these targets are, however, not encouraging. Mortality trends since 1950 suggest that Africa has achieved on the average an annual increment in life expectancy of only 0.39 years per year in the past three decades.[1]

b) PATTERNS AND TRENDS IN INTERNATIONAL MIGRATION

17. Intensive spatial mobility has long characterised African populations. In recent years the two main types of international migration are inter-country migrations and the large-scale movements of refugees.[2] International migrations in North Africa and sub-Saharan Africa display different patterns. In North Africa, international migrations involve emigration to Western Europe especially from Algeria, Morocco and Tunisia, and recently, to the oil rich Arab countries of the Arabian Peninsula and the Persian Gulf as well as Libya in North Africa. In sub-Saharan Africa the main type of international migration consists of intercountry labour movements towards more developed agricultural, mining and industrial regions.

i) North Africa[3]

18. For several decades, the three Maghreb countries (Algeria, Morocco and Tunisia) have supplied the industrial countries of Western Europe with migrant labour. However, from the 1970s as a result of restrictive measures in the major immigration countries, a marked decline has occurred to emigration to Western Europe. In the meantime, the oil rich countries of the Arabian Peninsula and the Persian Gulf along with Libya have assumed importance as receiving areas of migrants from North Africa.

1/ UN, World Population Prospects, Estimates and Projections as Assessed in 1984, New York, 1986, pp. 37-40.

2/ For more information on this subject see, "International Migration in Tropical Africa," special issue of International Migration Review, Vol. 8, Fall 1974.

3/ United Nations, International Migration Policies and Programmes: A World Survey, ST/ESA/SER.A/80 (New York 1982); and United Nations, Trends and Characteristics of International Migration Since 1950, ST/ESA/SER.A/64 (New York: 1979).

ii) West Africa

19. International migration in this sub region consists largely of labour mobility for employment and trade based on seasonal trends: migrants (mainly males) from inland countries especially Burkina Faso, Mali and Niger shuttle between their homes and coastal regions in especially Côte d'Ivoire, Ghana and Senegal.

20. Recent developments, including legislations restricting foreign immigration, a rash of expulsion of foreign nationals in certain countries and poor economic performance of the major receiving countries have resulted in changes in international migrations flows. For instance, it would appear that Ghana became a net emigration country during the period 1975-1982. Also Côte d'Ivoire, faced with difficult economic problems, has expressed the wish to reduce immigration. Nonetheless, it seems certain that previous pattern of emigration from Burkina Faso and Mali is still taking place, though on a reduced scale.

iii) Southern Africa[1]

21. International migration in Southern Africa is characterised by short-term, movements, of about 6 to 12 months, of young males from Botswana, Lesotho, Malawi, Mozambique and Swaziland to the mining and industrial complexes of South Africa, Zimbabwe and Zambia, with migration to South Africa highly regulated.

22. In all the main receiving countries immigration has decreased in recent years. With respect to South Africa, it is mainly due to two factors: the desire by the South African Government to reduce the dependence of the gold industry upon foreign labour and the institutionalization by the labour recruitment processes aimed at controlling the occupational and locational mobility of foreign migrant labour. In the labour exporting countries because of the effects of the movement on rural areas and the restrictive immigration requirements some steps have been taken to reduce the rate of out-migration to South Africa. However the reduction in the number of labour emigration has proved difficult for Lesotho, which traditionally had had a much bigger emigrant labour force in South Africa compared with Botswana or Swaziland.

23. The inflow of foreign migrant workers into both Zimbabwe and Zambia has decreased because these Governments have, since independence, attempted to foster the indigenization of jobs by pursuing economic policies geared towards self-reliance. To this end, they have instituted more stricter control over the granting of work permits and introduced closer surveillance of their land borders.

iv) Eastern and Central Africa

24. Inter-country movements, for example across the borders of Kenya, Uganda, and Tanzania, for employment in rural agriculture and increasingly in urban areas, have been the main feature of international migration in East Africa within the last two decades. Though sporadic border closures have sometimes resulted in temporal declines, movements among neighbouring countries are still extensive. Also, the emergence of refugee movements is another important migration trend in Eastern Africa recently.

1/ UN, op.cit

25. The two major receiving countries in Central Africa are Gabon and Zaire. Gabon's immigrants are mainly workers from Central and West Africa, who form a sizeable proportion of the country's population. The Government has recently expressed the desire to reduce the number of immigrants. Zaire, on the other hand, has been for a long time now an asylum of refugees from neighbouring countries.

III. INTERRELATIONSHIPS AMONG POPULATION RESOURCES AND SOCIO-ECONOMIC DEVELOPMENT

26. The World Population Plan of Action (WPPA) adopted at the 1974 World Population Conference, the Lagos Plan of Action (LPA) adopted by the African Heads of State and Government in 1980, the Kilimanjaro Programme of Action on Population (KPA) adopted by African Governments in 1984, and the International Conference on Population (ICP) held in Mexico in 1984, have all recognized the interrelationship between population and development and the need to consider population as an integral component of socio-economic development. The interrelation between population and development is not always easy to explain, however the impact of population on development is easily noticed when one examines current socio-economic problems facing African Governments in the face of increasing population growth. Population can have a positive as well as a negative impact on socio-economic development depending on the level of technology available. Similarly the level of socio-economic development can have an impact to depress or increase population growth rates. Hence any attempts to resolve current socio-economic problems in Africa must include both demographic and socio-economic policies conducive to raise the overall standard of living of the population.

27. It is in this context that Africa's Priority Programme for Economic Recovery (APPER) 1986-1990, emphasized that population issues should be taken into account in the formulation and implementation of economic policies and programmes with a view to accelerate socio-economic development at National, sub-regional, regional, continental and international levels. Among the specific actions to be taken at national level as indicated in APPER with regard to population and development include, formulation of national population policies; programmes to reduce high levels of infant, childhood and maternal mortality and morbidity especially in rural areas, as well as formation of national family planning programmes where necessary; formulation of a comprehensive rural development policy to stem the rural - urban migration; introduction of context-specific population redistribution/settlement policies, appropriate population legislation, population education and information programmes.[1]

28. The United Nations Programme of Action for African Economic Recovery and Development (UN-PAAERD) 1986-1990 adopted by the General Assembly in 1986 has called for a number of policy reforms to be undertaken by African Governments in order to achieve the objectives of APPER. UNPAAERD states, among other things, that special importance need to be accorded by each African country to a population policy that, on the basis of the KPA, address issues of high fertility and mortality, rapid urbanization, rural-urban, rural-rural migration, the problems of children and youth, and the protection of the environment in a manner that would ensure

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1/ Organization of African Unity Africa's Priority Programme for Economic Recovery 1986-1990, July 1985, pp. 21-22.

compatibility between demographic trends, appropriate land utilization and settlement patterns, and the disired pace of economic growth and development.[1] Thus KPA, APPER and UNPAAERD are all relevant to this paper on population dynamics in the context of socio-economic development.

29. The brief background concretely places population dynamics as an integral component of socio-economic development. While the interrelationship between population and development are complex and difficult to disentangle, various studies, including the proceedings of the Expert Croup on Population, Resources, Environment and Development held in Geneva in 1983, as well as studies on the World Fertility Survey published in 1987 are contributing significantly to the understanding of some of the interrelationships and their impact. The rest of this section is devoted to the interrelationships among population resources, and socio-economic development using selected areas of concern including food, health, education, employment, environment/resources, rural/urban development, and consequencies of international migration.

a) Population and Food

30. The food and population imbalance situation has worsened in the 1980s in Africa following the 1974 World Food Conference which at that time adopted resolution IX on the achievement of a desirable balance between population and food supply. During the 1970s, Africa's food production grew at 1.7% per annum[2] while population grew at 2.9% per annum. During 1980 to 1981 and 1982 to 1983 food crops production rates were 1.0% and 0.2% respectively[3] while population growth rates were about 3%. Research has shown that more than 40% of the African population live in countries where yields per hectare are lower today than they were a generation ago.[4] Relating the 1980-1986 food production index growth rates (using 1979-1981 as base year) to population growth rates for 1980-1985, it is observed that in 62% of the 50 ECA member countries shown in Table 1, food production index growth rates were less than population growth rates.

31. It should be stressed that the availability of adequate food is one of the crucial requirements for a healthy life. When the population has adequate food it is in a position to expend energy in various economic activities to foster greater productivity. The consequences of insufficient food availability are malnutrition, increased morbidity and mortality. This in turn lower productivity in genral in all economic development activities. In 1975 it was estimated that 25% of the African population had inadequate protein/energy supply in their diets;[5]

1/ UN General Assembly, United Nations Programme of Action for Africa Economic Recovery and Development 1986-1990, Document A/RES/S-13/2, 13 June 1986, p. 11.

2/ United Nations, World Population Trends, Population and Development Interrelationships and Population Policies 1983, Monitoring Report, Vol. 1 N.Y. 1985, p. 8.

3/ ECA, Report on the Implementation of the Food & Agricultural Aspects of the Lagos Plan of Action (1980-85) E/ECA/CM.12/6, 9 March 1987 See Annex I, Table 5.

4/ World Watch Institute, Reversing Africa's Decline, Lester Brown and Edward C. Wolf, Paper No. 65, June 1985, P. 60.

5/ ECA, Survey of Economic and Social Conditions for Africa, 1977-1978, Part I.

As the food production has deteriorated since 1975 and the population has continued to increase at higher rates, the proportion of the population affected by malnutrition is, no doubt, more serious at present. This is clearly substantiated by the fact that during 1984/85, FAO identified 21 African countries as facing exceptional food supply problems. The situation has not improved much in some countries. The most vulnerable groups of the population affected are children and mothers. Although in the world as a whole there is enough food to feed all the population, African countries lack foreign exchange to import food. Consequently many countries have to resort to food aid which eventually has a demoralizing effect on the recepient countries. Moreover, food aid is far from satisfying food needs of the population.

32. It was estimated that population growth contributed about 77% to the increase in food demand in Africa between 1962 and 1985.[1/] Given the importance of population growth as a major factor in determining total food consumption, policies to slow the rate of population growth rate in combination with other policies to improve and increase food production would contribute to increase availability of sufficient food. It is true that population growth can be an asset to increase food production in Africa. However this is possible only with increased productivity that makes use of technological innovations, large investments in Agriculture, proper management of the land resource and scientific knowledge. These inputs are lacking in African countries and there is need to acquire them. As an illustration, a hectare in Canada and USA can yield 3,860 kilogrammes of cereal while as in Africa a hectare would only yield 839 kilogrammes of cereal.[2/] This means that Canada and USA would produce 4.5 times more per hectare than Africa due to technological innovations and investments in agriculure. It has been stressed that it is only through a considerable expansion and improved efficiency of supporting services that technological innovations and modern inputs can be expected to reach the mass of rural poor and enable the traditional subsistence farmer to produce food for the market.[3/] While Africa does not have to wait till it acquires that technological innovation, with changes in policies that favour better food and agriculture production, Africa can still produce adequate food for its people and even have some surplus.

33. It should be mentioned here that a detailed study on "Food Production and Population Growth was carried out by ECA in 1983 and has been published by the United Nations.[4/] That study concluded that continued population growth without substantial increase in food production makes the task of improving the food situation in Africa very difficult indeed. It also recognized that reduction of population

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1/ FAO, Provisional Indicative World Plan for Agricultural Development, Vol. 1, Conference Document C.69/4 August 1969, p. 15.

2/ Population Concern, Population Misconceptions, London, May 1984, Pages 23 and 29.

3/ FAO, Regional Food Plan for Africa, Rome 1980.

4/ United Nations, Population Resource, Environment and Development (Proceedings of the Expert Group on Population, Resources, Environment and Development, Geneva, 25-29 April 1983) New York 1984, see pages 241 to 265.

growth per se is not a sufficient or essential condition for improving the food and nutrition problems in Africa. The study rightly recommended also policy measures that relate to the pricing of farm produce and inputs, the expansion of cultivated land, priority to food crops instead of cash crops only, reduction of post harvest losses, and an improvement in institutional arrangements for extension services, improving farming husbandry, technology and skill, rationalizing the land tenure systems, the promotion of substitutes for food imports, improvement in livestock and fisheries production, regional and sub-regional co-operation and trade in food and agricultural products among African countries and the control of population growth and urbanization.[1]

34. It should be observed that the UNPAAERD has given a number of measures to improve food and agriculture production in Africa. Some of these measures which are similar to what has been indicated in the proceeding paragraph call on African countries to[2] raise substantially investment in agriculture, improve land productivity, establish remuneration produce pricing policies; develop mechanization and the use of modern farm processing machinery, increase use of fertilizers, improve seeds and pesticides; improve and expand the storage capacity, distribution and marketing systems; develop agricultural research and extension; put at the disposal of the small farmers the necessary inputs for increased yields; establish assistance programmes for small farmers, especially women food producers and rural youth. In addition UNPAAERD states that African countries should also push for the attainment, within the shortest possible time, of an agro-food production growth rate at least equal to population growth rate.[3] Finally UNPAAERD calls for improvement in other sectors in support for agriculture, namely, agro-related industries, transport and communication, trade and finance.[4]

b) Population and Health

35. The health situation in Africa is far from being satisfactory despite the tremendous efforts governments are making to improve and expand health services for the people. This is illustrated by the fact that life expectancy at birth in Africa was round 50 years during 1980-85 as compared to 73 years in the developed regions. Table 1 shows that in 31 of the 50 African countries (i.e. 62%), life expectancy at birth was below 50 years between 1980-85. Only Algeria, Mauritius, Sao Tome and Principe, and Tunisia had life expectancy at birth of 60 years and over. In 34 African countries infant mortality ranged between 100 and 180 per 1000 live births during 1980-1985. While a healthy population is an asset to socio-economic development, a population with poor health is a liability to socio-economic development.

1/ Ibid, pp. 262-263.

2/ United Nations General Assembly, United Nations Programme of Action for African Economic Recovery and Development, 1986-1990, op.cit, p. 6.

3/ Ibid, p. 11.

4/ Ibid, p. 7.

36. For good health, one needs adequate food supplies and nutrients, access to clean drinking water, health services, education and reasonable income. The present situation is that these requirements are not met. There exist in urban areas some impressive but not adequate health services while the rural areas are virtually deprived of any meaningful health services. It was because of this imbalance and inadequacy of health services that the World Health Organization came up with the programme on primary health care to emphasize provision of improved health services for the greater majority of the people especially in the rural areas at lower costs than what has been the case in concentrating the expensive health infrastructure in cities.

37. Many African countries are in the process of implementing primary health care programmes towards the goal of health for all by 2000. In general, due to resource constraints, these programmes are not firmly established. There is no adequate information available yet regarding the impact these programmes have had so far. It might be adequate to hope that vigorous implementation of primary health care programmes should be able to contribute to reduction of morbidity and mortality through proper nutrition, and reduction of sickness. The impact of this would be increased productivity in socio-economic development.

38. Improvement in health in the short run contributes to reduction of mortality and increases fertility and hence to increased population growth rates. However in the long run when people are convinced of the survival of their children, there will be a change in fertility intentions and ultimately in fertility levels. Lower mortality will thus lead to lower birth rates in the long run and would result in lower growth rates. However, where mortality rates, especially those of children continue to be high, there would be no prospects for fertility to decline.

39. Rapid population increase is a constraint to the health services as it increases the demand for health services. Already existing services are not adequate and they are deteriorating. Most countries do not have adequate resources to expand and improve the health services. It is thus noted that while the demand for health services increases with increasing population, there is no equivalent growth in health services supplied to match the demand. The conclusion is obvious - worsening of the health conditions. This then reinforces continued population growth resulting in large number of unhealthy population whose labour productivity is low. Moreover, high population growth means that mothers have births which are not adequately spaced. This has profound implications on the health of both the mothers and children in the form of high maternal and infant mortality rates as well as to malnutrition problems of both the mother and the children.

40. Given the vicious circle regarding the impact of high population growth on the provision of health services, it is emphasized that governments in their attempts to implement the primary health programmes should give special attention to the education of women, provision of mother and child health and family planning programmes, and improvements in environment health, and provision of clean drinking water to the population. These activities would contribute to the improvement in the life of the population as well as to reduction of population growth. Such programmes would also need to be complemented with activities that would enable availability of adequate food supplies. Countries need to increase their

investments in the health sector. Without increased investments in the health sector and in the context of continued increase in population growth, it would be difficult to expand and improve the health services.

c) Population and Education

41. Education plays a significant role in the development of human resources which in turn is a catalyst in accelerating economic and social development. Thus educational planning should aim at provision of a general education for the majority of the population of school-age and provision of working-age population with adequate skills relevant to the nation's economic realities. In pursuance to this, the Conference of African States on development of education in 1961 recommended, among other things, the following:-

a) Expansion of primary education with the aim of providing universal free and compulsory primary education by 1980/81.

b) Expansion of secondary school enrolment to absorb the increased numbers leaving primary schools.

c) To reform curriculum at all educational levels so that education would be more responsive to the needs of a changing society and would be appropriate to the needs for structural changes in existing economies.

42. Emphasis in the reform of curriculum at secondary level was laid on technical education and agricultural education.

43. Indeed significant progress has been made to increase enrolment especially at primary level from a gross enrolment ratio of 41% in 1960 to 78% in 1980.[2/] However the object of providing universal free and compulsory primary education by 1960/81 was never achieved and will still remain a dream for years given the demographic impact on education. Expansion of secondary school enrolment has not been adequate to absorb large numbers leaving primary school. Reform to curriculum has not been satisfactory either to respond to Africa's economic and social problems. Table 1 shows that in nearly 60% of ECA member States literacy rates are below 50%. Females are not given equal opportunity in education as males. For example, in 1980 females constituted 41% of the total enrolment at primary level, 38% at secondary level and 27% at higher education.[3/]

1/ United Nations Economic Commission for Africa/United Nations Educational, Scientific and Cultural Organization: Conference of African States on the Development of Education in Africa. Addis Ababa, 15-25 May 1961, Final Report.

2/ United Nations, Population, Resources Environment and Development, New York, 1984, p. 368 (Table 2).

3/ Ibid, p. 470 (Table 3).

44. Rapid population growth is a major factor that increases the demand for education. Most countries are faced with serious problems of expanding their educational institutions to accommodate the increasing numbers of school age population due to limited available resources to invest in education. It is very common these days that in order to accommodate more students some governments have increased pupil/teacher ratios which are not manageable at all and this affects the quality of education. In other cases shifts are introduced to enable more people use the educational facilities. This too lowers quality of education as contact time between teacher and students is significantly reduced. Hence it is not possible to equip the young people with adequate education to enable them contribute actively to socio-economic development. The generally observed results are large numbers of young people who are unemployed. Even those who have education up to secondary or university level are increasingly finding it difficult to get employed in most African countries. With school-age population growing at about 3%, Africa's challenge for expanding and improving education is formidable. Reduction in population growth rates would, no doubt, lessen the magnitude of the problem. Mr. A. W. Clausen, then President of World Bank, noted in 1984 that countries like Malawi faced the doubling or tripling of their school age population by the end of the century. He remarked that with rapid fertility decline could come savings of more than 50% in the school system in 30 years with the resulting savings that could be used to improve the quality of education.1/

45. While the constraints and impact of rapid population growth on education have been noted above, attention is now given to consider the effect and impact of education on population. There is ample evidence that where the majority of the population is highly educated and literate, especially higher education for women, both fertility and mortality are much lower than where educational standard and literacy are low. Thus the combined effect of low fertility and mortality rates is lower population growth rates. Prolonged education postpons age at marriage for women from early marriages to older ages, thus enabling women to shorten child bearing period. Educated women are more likely to have opportunities to be employed in the modern sector out of the home. Such activities have sometimes been associated with lower fertility. In addition educated women are more likely to be receptive to improve the health of their family as well as to accept and practice family planning. In the long run such activities contribute to slower population growth rate. Finally, countries whose population is highly educated and literate are associated with higher socio-economic development and better living conditions of the population in general. Better education creates an environment which enhances the acquisition of innovations and application of scientific technologies which are the main pillars of socio-economic development and progress. The achievement of high socio-economic development level eventually contributes in reducing population growth rate as seen in the developed countries.

46. In conclusion it is emphasised that government policies on education to respond to the increasing educational demands need to be reconsidered to give special priority to preparing the young people with necessary skills and knowledge relevant to developmental needs of the country. In view of the lower educational opportunities accorded to women in the past, this situation must be corrected

1/ The World Bank, Population Growth and Economic and Social Development address by A.W. Clausen to the National Leaders' Seminar on Population and Development, Nairobi, Kenya, July 11, 1984, p. 9.

to enable women have equal educational opportunity in the society. Deliberate policies to enhance reduction in population growth rates should be given serious attention and implemented vigorously as this is likely to lessen the burden of providing educational facilities and services in the context of limited resources.

d) Population and Employment

47. The provision of gainful employment is an important social goal in that it affords an individual and families a means to earn a living. One way to eliminate poverty is to ensure that all eligible persons in the labour force have an employment with adequate remuneration. With the income received from employment the individuals and families should be able to buy their necessities. In the past some countries had the belief that a larger population was necessary for reasons of ensuring a large labour force needed to develop the potential resources. What one observes is that indeed few of those in the labour force have gainful employment in the modern sector and the majority depend on subsistance farming from which they do not generate adequate income to meet their other basic needs. Unemployment and under-employment are reasonably high in both urban areas as well as in rural areas. It has been indicated that open unemployment shot up from 12 million workers or 5.3% of the labour force in 1980 to 22 million or over 10.2% of the African labour force in 1985. Underemployment which stood at 40% affecting 60 million people in 1980, increased to affect about 48% of the labour force or 95 million people in 1985.[1/]

48. In most African countries, university graduates, secondary school and primary school leavers are all finding it increasingly difficult to get gainful employment. As an example, a graduate employment tracer study conducted in 1985 showed that only 10% of the Nigerian University graduates who had completed their national service had secured jobs one year after; 10 years earlier, full 98% had found jobs within three months of their graduation.[2/] It is apparent therefore that mere increasing the numbers of the people in the labour force does not necessarily contribute to the development of the potential resources countries possess.

49. What the large labour force in African countries lack is the necessary training, skills, and technological know-how and capital investments to contribute effectively to socio-economic development. A smaller labour force that is equipped with training, skills and technological know-how would be more productive than a large one that lacks training, skills and technological know-how.

50. High population growth rates normally lead to increased growth rates in the labour force as is shown in Table 1. Thus greater employment opportunities should be created to absorb the increasing numbers of the population in the labour force. The current situation in most African countries as already noted is characterised by large numbers of the unemployed and underemployed. It is

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1/ ECA, Progress in the areas of Employment Generation, Productivity Enhancement and Co-operation in the Use of High-Level Manpower, Document E/ECA/PAMM/HRD/CM/88/9.

2/ O. Folayan Ojo, "Employment Generation and Productivity Enhancement Strategies in Nigeria" (Mimeo).

clear that rapid population growth in the light of the slow or stagnating situation in creation of more jobs frustrates and makes it difficult for governments to improve the employment situation. Such a situation increases the unemployed, increases poverty and inequality. Lack of adequate investment is one of the reasons for the inability of governments to invest in projects and activities necessary for creation of new employment opportunities. Since most people do not have gainful employment that would be conductive to savings, the little that they earn is all spent on consumption. The effect of this is reflected in there being no savings that could be invested for development activities that could lead to creation of more jobs.

51. It must, therefore, be pointed out that reduction of population growth rate would to some extent, in the long run, help reduce government pressure on job creation difficulties created to a greater extent by rapid population growth that is not properly prepared to contribute effectively in socio-economic development. On a positive note, better employment opportunities to the population in the labour force and especially for women would contribute to reduction in population growth, increase the propensity to save and the savings could be used to investment in various developmental activities. Better employment opportunities for the majority in the population leads to better income distribution, lessens the level of poverty and thus improves the living conditions of the population in general.

52. In attacking problems of human resources planning, employment, and unemployment, in the light of rapid growing labour force, governments need to pay attention to the relation between development of education to the economic and social realities and needs of the country. Thus the education system should aim at training and educating the young people to be able to find gainful employment in the economy. The education system should prepare the young people to acquire and adopt technology as well as introduce innovations and technologies to suit problems of their countries. To do all these governments have to invest large amounts of money in education. Due to poor employment conditions, a number of educated and well qualified people have left their countries and are living in other countries. Improvement in employment and political conditions would reduce the brain drain. Lastly, the inclusion of policies to modify prevailing high population growth rates should form part of the strategy to resolve the problem of providing employment to the majority of the population.

e) Population, Environment and Resources

53. Population growth affects the resource base, environment and development. Conversely, availability of resources, the quality of environment and the level of development affect the population size, structure and its growth rate. These relationships vary among countries depending on the level of technology applied. Large capital investment coupled with the application of technology would make it possible to sustain a large population on a fixed resource base for a longer time. The hypothesis that the pressure from a large population growth could act as a stimuli to technological innovations which would then be applied to sustain that large population on existing resources does not seem to give hope to the African situation. The acquisition of the requisite technology is rather slow and not encouraging at all. It was the view of the Expert Group Meeting on Population,

Resources, Environment and Development in 1983 that in modern times, it is not likely that population pressure can contribute to technological advance unless there is modification of economic and political structures.[1/]

54. Overgrazing due to increased number of livestock is causing considerable deterioration of the grasslands. An FAO report on 8 countries in Southern Africa in 1984 revealed the extent of overgrazing. For some of the countries and major areas of others, the existing herds exceed the carrying capacity by 50 to 100 per cent.[2/] Such a situation contribute significantly to soil erosion and environmental degradation. A 1980 World Bank survey of selected African countries showed that fuelwood demand exceeded estimated sustainable yields in 11 of the 13 countries studied.[3/] Deforestation of trees for fuelwood is something that is causing a lot of concern for many governments as fuelwood is the main source of energy for cooking and heating. Increased population has meant more demand for fuelwood and hence most of the wood has been depleted. The effect of this is that since wood in the nearby surroundings has been depleted and women in the rural areas have to spend a lot of their time to travel to distant places to fetch firewood. In the case of towns this has had an impact of raising prices for firewood to certain levels that take up a considerable income of the families for fuelwood. It has been noted that in Ethiopia, for example, the price of increasingly scarce wood for fuel had risen ten folds during the 1970s and now takes up to 20% of households incomes.[4/] This also applies to many other African countries. Population overcrowding in urban areas without adequate housing, health, and water services contributes to health hazards as well as environmental pollution. The development of uncontrolled slums or shanty towns in all African urban areas tell the story vividly.

55. The Interaction Council set up by UNEP expressed a very grave situation regarding the balance between population, environment and development at its meeting in Tokyo and Hakone, Japan, in April 1986. The Council pointed out that the balance between population, environment and development had been lost. Being very concerned about population problems and continued deterioration of the environment, it then called on Governments to reduce military spending and place top priority on the interrelated issues of population, environment and development. The Council appealed to Governments to safeguard the environment using technological innovations. Finally, the council urged Governments to assess present and future resources in such a way as to lead to population policies through which all human beings may be reasonably assured of the satisfaction of their basic needs.[5/]

1/ United Nations, Population Resources, Environment and Development, op.cit., 1984, p. 24.

2/ World Watch Institute, Lester R. Brown and Edward C. Wolf, Reversing Africa's Decline World Watch paper No. 65, June 1985, p. 13.

3/ Ibid, p. 12.

4/ World Bank, Population Growth and Economic and Social Development Address by A.W. Clausen to the National Leaders' Seminar on Population and Development, Nairobi, Kenya, July 11, 1984, p. 11.

5/ United Nations Environment Programme, 1986 Annual Report of the Executive Director, Part one, Nairobi 1987, pp. 12-13.

56. Since deforestation, overgrazing, land mismanagement and pollution have had significant impact on the resource base and environment due to a greater extent to population growth, among the measures to improve the resource base and the environmental conditions should include control of deforestation, overgrazing, and soil erosion; undertaking of reafforestation programmes; improve the environmental health conditions; and programmes to reduce population growth rates. The World Watch Institute paper on "Reversing Africa's Decline" indeed emphasized programmes on reforestation, soil conservation and family planning.[1/] In a recent survey conducted by ECA in 1986/87 on the implementation of APPER and UN-PAAERD, of the 30 member States which responded, 90% indicated they were taking actions on reforestation programmes, 77% were controlling deforestation, and 53% were controlling overgrazing and/or over exploitation, and 63% were controlling soil erosion and/or salination.[2/] These efforts need to be intensified so as to achieve a resonable balance among population, resources and environment.

f) Rural/Urban Development

57. Migration from rural to urban areas is the main cause of rapid population growth of African towns and cities, particularly the capitals. During the early period urban areas attracted population from the rural areas as they offered alternative employment other than on the farm. There were better education, housing, health and other services in urban areas than in rural areas. Concentration of development activities in urban areas at the expense of rural areas has continued the migration trend to be mostly one directional -rural to urban areas. The results have been that the infrastructure in most African urban areas are inadequate to satisfy the various needs of the population - housing are insufficient, schools are not adequate, the employment opportunities are limited, the health services are overstretched, water and sewarage service are overloaded. The following statistics may illustrate some of the urban/rural development problems: In 1980, 85% of the population in Addis Ababa were reported to live in slums and squatter settlements, In the case of Luanda and Dar-es-Salaam the figures were 70% and 60% respectively.[3/] Although 81% of the urban population in Africa are provided with safe cleaning water this represents only 23% of the total population.[4/] Taking Ethiopia as an example, it has been indicated that 16% of the total population has access to clean drinking water while the figure for rural areas is 10%.[5/] Thus the majority of the population in rural areas lack clean drinking water. It has been observed that 50% of the combined urban population in developing countries receive adequate sanitation services while as in rural areas only 13% of the people have adequate sanitation services.[6/]

1/ World Watch Institute, Reversing Africa's Decline, Op.Cit., p. 71.

2/ ECA, Progress in Implementation of the United Nations Programme of Action for African Economic Recovery and Development and Africa's Priority Programme for Economic Recovery and Development, 1986-1990, E/ECA/CM.13/ 5, 6 April 1987, p. 9.

3/ United Nations Centre for Human Settlements (Habitat) Human Settlements Policies and Institutions: Issues, Options, Trends and Guidelines, Nairobi, Kenya, 1984, p. 5.

4/ United Nations Centre for Human Settlement (Habitat) A review of Technologies for the Provision of Basic Infrastructure in Low-Income Settlement , Nairobi, 1984, p. 15.

5/ The Ethiopian Herald of November 24, 1987.

6/ Same ref as footnote 4 above, p. 15.

58. What appears to be basically the cause of the rural to urban migration is that life in the rural areas is not attractive as there seem to be no real development in those areas. One way to reduce the problem and to encourage the population to remain and work in the rural areas is to invest in development projects in the rural areas. Such projects should focus on employment generation activities that raise incomes, and provide health, education, transportation, marketing and other services. This was emphasized in the KPA which recommended that Governments should revitalize rural economies and provide in rural areas, socio-economic services which stimulate and sustain balanced self-reliant development.[1/] This does not mean that governments should stop development activities in urban areas. Efforts should be continued to improve the conditions in urban areas as well but there should be special emphasis to have more development programmes in rural areas. Implementation of integrated rural development projects at a large scale should go a long way to resolve prevailing problems in rural and urban areas.

g) Aspects of the Consequences of International Migration

59. International miagration has various short- and long-term socio-ecoromic consequences, pertaining to, for example, manpower demand and supply, assimilation of immigrants and return migrants, rural development and provision of social services.[2/]

60. It should be noted that the consequences of international migration depends, among other factors, on the magnitude and type of migration, that is whether it is short or log-term in nature. In this context, taking the example of the three southern African labour suppliers staces, Botswana, Lesotho and Swaziland, the effects of the movements have been more severe for the economy of Lesotho given the much larger proportion of her labour force involved.[3/] In Lesotho, as a result of the emigration, agriculture has been transformed into a marginal activity, with rural incomes determined mainly by the presence or absence of migrant labourers in the household. The consequences of the migration are not, however, severe in Swaziland, for three main reasons: firstly because migrants are absent in the non-cropping season; secondly because only a few households cultivate crops requiring labour intensive methods and thirdly, because of the smaller and decreasing numbers of migrants involved. However, in the older labour reserve areas, decades of neglect of peasant farming and a massive brain drain has resulted in unemployment and poverty. The effects of labour migration on the economy of Botswana has been also minimal, since the country exports a relatively small amount of migrants to South Africa.

1/ ECA, Kilimanjaro Programme of Action on Population, p. 14.

2/ UN, The Determinants and Consequences of Population Trends, ST/SOA/SERA/SD/ New York, 1973, Chapter 7 (ECA).

3/ Economic Commission for Africa, Migratory Labour in Southern Africa, Papers presented to the Conference on migratory labour in Southern Africa, Zambia, 4-8 April 1978,(1985).

61. It has been shown that emigration has solved the problems of unemployment, in the short-run, of labour exporting countries, for example, in Burkina Faso in West Africa and Lesotho in Southern Africa, while, at the same time it has eased labour shortages in receiving countries (e.g. Côte D'Ivoire and South Africa).

62. On the other hand, such migrations have adversely affected rural economies of the sending countries in two ways. Firstly, in the shortrun, labour shortages have occurred during critical periods of the farming cycle, for example, in Lesotho. Even in areas, for example, in West Africa and Southern Africa where the migrations occur during the slack agricultural season, off-farm activities which are usually undertaken at this time, have in recent years declined in importance. Secondly, and more important, in the long-run, given the selective nature of labour migration, dominated by young males, critics have observed that it results in conservation in farming methods and in the choice of crops (for example, in Lesotho and Burkina Faso).

63. A recent problem pertaining to international migration in Africa has arisen in a number of African countries, such as in the Magreb and East and Southern Africa. This relates to the productive use domestically, of vastly expanding labour force, the result partly of decreased emigrations and return migrations dominated by young persons. It has been suggested that an alternative to emigration should be pursued at the level of development planning and policy.[1/] Explicitly, it has been proposed that, since a majority of emigrants come from rural areas, rural settlement projects, within the overall framework of integrated rural development programmes, have a major role to play in any future strategy for the solution of the problem.

IV SUMMARY AND RECOMMENDATIONS

64. The demographic phenomena of Africa has been shown to be characterised by high fertility, high but declining mortality and consequent high population growth rates. Africa is the only region among major regions of the world where population growth has continued to increase since 1950. For Africa as a whole, about 45 per cent of the population is under 15 years old. The median age of the population is about 17. Such a demographic profile has significant implications on socio-economic development.

65. Regarding international migration, it has been observed that in North Africa, the migrant labour flows were from Algeria, Morocco, and Tunisia to Western Europe. Libya and the oil rich Arab countries have been also important receiving countries of migrant labour from North Africa. In West Africa international migration consists mainly of labour mobility for employment from inland countries to coastal regions. Côte d'Ivoire, Ghana, and Senegal are major receiving countries of migrants from Burkina Faso, Mali and Niger. In recent years there have been restrictions on international movements in the region. There have been cases of mass expulsions of the foreign population to return to their countries. In Southern Africa the international migration has been dominated by migrant labour to South Africa from neighbouring countries. However, Zambia and Zimbabwe have also been receiving countries of migrants especially from Malawi in the past. Due to recent policies for Southern African countries to reduce reliance on South Africa, migration to South Africa is on the decline. Another form of international

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1/ Ibid.

migration which causes much concern in Africa's socio-economic development is that related to refugees.

66. An attempt has been made to show the interrelationships among population growth and related sectors such as food, health, education, employment, environment and resources, rural and urban development and consequences of international migration. African Governments have in principle, as reflected in the KPA, acknowledged the interrelationships between population and development and the need to ensure that population is the central focus of development planning.

67. Given the importance of population growth in determining demand for food, health, education, employment, housing, resource utilization and other social needs, governments need, in their efforts to foster rapid economic development, seriously to implement both demographic and social economic development policies that complement each other in the light of recommendations in the KPA. We reiterate below some recommendations which have been presented at various fora inresolving Africa's problems. The Joint Conference is requested to review the recommendations below:

i) Programmes to increase food production need to focus on adoption and implementation of policies that induce individual farmers to grow more food. Thus adoption and use of technology and innovation, price incentives, availability of and ease of access to markets, extension support services to farmers in the form of credit and supplies like fertilizer, seeds, education, etc. should form part of the packages to attain food self sufficiency and sustained agricultural development.

ii) Primary health programmes should give special attention to the education for women, provision of maternal and child health and family planning services as well as improvements in environmental health and provision of clean drinking water.

iii) In planning and implementation of educational programmes, attention need to be given to reduce the imbalance among males and females. Education should be oriented to prepare the young people to contribute to socio-economic development. Hence education should equipe the young people with necessary knowledge and skills as these would be essential in acquiring innovations and technologies for resolving development problems.

iv) Regarding resources and environment, governments need to take measures or intensify measures designed to improve the resource base and preserve the environment from degradation. The measures should include control of cutting of trees, overgrazing and soil errosion; undertaking reafforestation programmes; improving the environmental health conditions.

v) To reduce rural to urban migration and problems emanating therefrom, it is recommended that governments have to seriously implement development programmes in rural areas. Such programmes should ensure that adequate incomes are generated for the rural people and at the same time social and economic facilities and services should be provided to the rural population. In the context of UNPAAERD such programmes should include establishment of assistance for small farmers, especially women

food producers and rural youth; improving transport and communication, intensification of efforts to promote mass literacy and adult learning.

vi) To further contribute to socio-economic development, it is recommended that political conflicts which results in refugees problems should be significantly reduced or avoided.

vii) Finally, it is recommended that governments adopt and implement policies which are designed to reduce high fertility, mortality and population growth rates.

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Table 1 Selected socio-economic and demographic indi

Country	Population Growth Rate 1980-85 (%)	Mid-year population Estimate (million)	Growth Rate of (1980 at 19 price
	a/	a/	a/
Algeria	3.2	20.0	4.2
Angola	2.7	8.7	1.6
Benin	3.1	4.3	1.9
Botswana	3.6	1.1	12.1
Burkina Faso	2.4	7.3	2.7
Burundi	2.8	4.3	3.7
Cameroon	2.7	10.1	0.4
Cape Verde	1.2	0.3	3.6
Central African Republic	2.3	2.5	1.2
Chad	2.2	4.7	4.1
Comoros	3.1	0.4	0.3
Congo	3.0	1.8	1.2
Cote d'Ivoire	3.7	10.5	1.2
Djibouti	3.5(e)	0.4 (e)	1.4
Egypt	2.3	49.3	5.6
Equatorial Guinea	2.1	0.3	1.0
Ethiopia	2.9(e)	41.3	- 0.2
Gabon	1.6	1.0	4.0
Gambia	1.7	0.7	- 1.0
Ghana	3.2	15.0	- 0.0
Guinea	2.3	6.5	2.6
Guinea-Bissau	1.9	0.9	3.0
Kenya	4.1	23.1	1.5
Lesotho	2.5	1.6	- 1.1

ANNEX

Table 1 (Continued)

Country	Population Growth Rate 1980-85 (%)	1988 mid-year population Estimate (million)	Growth Rate of GDP 1980-1985 at 1980 prices (%)	Total Fertility Rate 1980-1985	Life Expectancy at birth both sexes 1980-85	Infant Mortality Rate Per 1000 1980-85	Population Literate Both Sexes 1985 (%)	Average Annual Growth of Labour Force (%) 1973-1984	Food production Index Growth Rate (%) for 1980 - 1986 Base year 1979 - 1981
Mauritania	2.9	2.1	2.80	6.9	44.0	137	28	2.3	0.37
Mauritius	1.9	1.1	4.32	2.8	66.7	28	83	2.3	3.54
Morocco	2.5	23.6	2.54	5.1	58.3	97	33	2.6	4.40
Mozambique	2.8	15.1	- 8.38	6.1	45.3	153	38	1.6	- 0.36
Niger	2.8	6.7	- 3.04	7.1	42.5	146	14	2.8	0.15
Nigeria	3.3	105.6	- 1.16	7.1	48.5	114	42	2.0	3.72
Rwanda	3.3	6.7	4.46	7.5	46.5	132	47	2.8	0.15
Sao Tome & Principe	2.3(c)	0.1(f)	- 6.72	7.0*	62.0**	48*	60	-	- 3.64
Senegal	2.6	7.0	3.52	6.5	43.3	142	28	2.2	2.93
Seychelles	0.6(c)	0.7	- 0.22	3.7*	49.0**	30*	72	-	-
Sierra Leone	2.3(c)	3.8	2.34	6.1	34.0	180	29	1.8	0.88
Somalia	2.9	5.0	0.12	6.6	40.9	155	12	2.6	0.70
Sudan	2.9	23.5	1.32	6.6	47.7	118	34	2.4	2.29
Swaziland	3.0	0.7	2.58	6.5	48.5	129	68	--	1.39
Togo	3.0	3.2	- 5.68	6.1	50.5	109	41	2.0	0.59
Tunisia	2.0	7.6	4.24	4.8	60.6	85	54	2.9	3.81
Uganda	3.3	17.2	2.34	6.9	49.0	112	57	2.2	6.12
United Republic of Tanzania	3.5	25.1	0.06	7.1	51.0	115	77	2.6	2.18
Zaire	2.9	32.8	1.74	6.1	50.0	107	61	2.3	2.69
Zambia	3.3	7.4	0.78	6.8	51.3	88	76	2.1	2.66
Zimbabwe	3.5	9.8	2.34	6.0	57.8	72	74	1.5	2.88

Notes on sources

(a) United Nations: World Population Prospects, Estimates and Projections as assessed in 1984, New York, 1986 (based on

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FERTILITY LEVELS, PATTERNS, DIFFERENCE AND TRENDS IN SOME AFRICAN COUNTRIES

Inrroduction

This study corresponds to programme element 2.1 (i) of the Population Division for the 1988-1989 fiscal year which requested the Division to submit a report on fertility levels, structure, trends and determinants to the Fifth Joint Conference of African Planners, Statisticians and Demographers.

Two international research programmes on human fertility have so far provided reliable data on the levels, structures and trends of fertility in Africa. They are the World Fertility Survey (WFS) which has now been completed and which covered 13 African countries during the period 1977-1982 and the Contraceptive Prevalence Survey (CPS) of Westinghouse Public Applied Systems which is ongoing and for which analysis reports of three countries are currently available 1/. In addition to these 16 countries, the results of Rwanda's 1983 fertility survey are also available.

Thirteen African countries were programmed by Westinghouse Health Systems under its Contraceptive Prevalence Survey Project; the analysis report of the survey of three of them : Botswana, Zaïre and Zimbabwe are available.

On the strength of these data, it can be affirmed that Africa is the world's region with the highest level of fertility. Such fertility levels seem to be the outcome of a combination of several factors such as low levels of economic and social development, cultural, religious and political problems that arise when population issues have to be discussed and the small number of institutions capable of handling such problems. The recent and probable development of fertility does not appear to indicate a clear cut downward trend except in a few countries where fertility is thought to have decreased partly as a result of family planning programmes. It is possible that fertility could stabilize at relatively high levels in many countries while it will probably increase in others.

The points developed in this document will deal with fertility levels, structures, trends and determinants in Africa. Most of the findings presented are derived from studies carried out by the ECA Population Division as part of the analysis of data from the World Fertility Survey.

1. Fertility levels

According to United Nations estimates, women of child-bearing age (15 to 49 years) accounted in 1985 for 45 per cent of the continent's total female population 2/. The same estimates indicate that regardless of the fertility index used, African women are always among the most fertile.

1/The World Fertility Survey carried out by the International Statistical Institute in collaboration with the United Nations and the International Union for the Scientific Study of Population (IUSSP) covered the following 13 African countries: Benin, Cameroon, Côte d'Ivoire, Egypt, Ghana, Kenya, Lesotho, Morocco, Mauritania, Nigeria, Senegal, the Sudan and Tunisia.

2/ United Nations, World Population Prospects, estimates and projections as assessed in 1984, New York, 1986.

Africa thus has the highest levels of fertility in comparison with other regions of the world if fertility is expressed in terms of crude birth rates, crude reproduction rates or net reproduction rates. The values of these indexes are much higher in Africa where they have respectively been estimated at 45 per 1000, 3.06 and 2.29 for the 1985-1990 period. In comparison, the crude birth rate was estimated for the same period at 25 per 1000 and 30 per 1000 for Asia and Latin America respectively.

The total fertility rate is, however, one of the most common measures of fertility; it indicates the average number of children that a woman could give birth to if she lived until she was 50 years old and if fertility rates per age remained constant. For the 1985-1990 period, the total fertility rate was estimated at 3.28 for the whole world, 1.97 for the more developed regions, 3.69 for all less developed regions, 3.73 for the Americas and 3.14 for Asia. The value of 6.22 estimated for Africa for the same period is well above these averages and means that fertility levels are about 3 times higher in Africa than the rate of 2.2 required to renew any population.

For the different regions of Africa, the same estimates indicate that fertility is considerably higher in West, East and Central Africa where the total fertility rate is estimated respectively at 6.86, 6.22 and 6.03 while it is only about 5 in North Africa and southern Africa.

2. Fertility structure

Table A1 in the annex shows age-specific fertility rates generated by the African surveys of WFS and CPS. These rates which indicate the structure of fertility are closely dependent on age and nuptiality characteristics.

The fertility structure by age-groups is generally speaking characterized by a wide spread of births over the entire period of reproduction. The fertility rates, however, grow very quickly after the 15-19 year age group until the 25-29 year and decrease gradually thereafter; but fertility still remains high even after 40.

On the other hand, the structure observed in the industrialized countries in characterized by a greater concentration of births particularly among women in the 20 to 34 year age bracket. The fertility rates by age show that fertility is much later in these countries and that considerable contraception to prevent child bearing is practised while such contraception is virtually non-existent in African countries.

It has also been observed that the most fertile African women are those in the 20-29 year age bracket and often the 25-29 age bracket. The results of the WFS indicate, however, that women of the same age group (20-29) are still the most fertile in the other regions of the world.

Table A2 in the annex shows the contribution of the various age group in African countries to the total fertility rate.

Adolescent fertility (15-19 years) seems to be considerable in most of the countries studied with a contribution of 10 to 15 per cent to the total fertility rate; such percentages show how precocious the tempo of fertility is in those countries; the exceptions are Rwanda and Tunisia where adolescent fertility accounts for only a small proportion of the total fertility rate of the order of two to three per cent.

If the contribution to recent fertility of the two other major age groups (20-29 years and 30-49 years) is now considered, it is noticed that in most of the countries, women between 20 and 29 years of age and those between 30 and 49 years of age contribute roughly the same proportions, about 45 per cent, to current fertility. The countries concerned are: Benin, Lesotho, Mauritania, Nigeria, Senegal, the Sudan and Zimbabwe. On the other hand, in countries such as Cameroon, Egypt and Morocco the contribution of intermediate age group (20-29 years) is considerably higher, between 45 and 51 per cent, while the contribution of women who are 30 years old and over is much higher in the group of countries comprising Botswana, Chana, Kenya, Rwanda and Tunisia: it is even as high as 52 per cent in Tunisia and 64 per cent in Rwanda. The no-explanation has yet been found for this in Rwanda, but the considerable contribution of women who are 30 and over in Tunisia might be because of the change in that country's tempo of fertility.

In a nutshell, the contribution of the various age groups to fertility shows that Africa still has a classical fertility tempo pattern where women continue to reproduce until they approach 45.

3. Recent and probable trends in fertility

It is difficult to make a definite statement on general fertility trends in most of the African countries because the data available are inadequate in terms of quantity and quality. It should, however, be recognized that WFS type of data have been considerably useful in analysing fertility trends; however, because of distortions caused by omissions and poor dating of events, such analysis will be restricted to the 20-year period preceeding each national survey.

Table A3 shows recent developments in fertility (measured by the cumulation of fertility rates up to the 30-34 age group by periods of five year) in 14 African countries that have fertility data based on the WFS model.

With respect to the general trends in fertility, a look at the data shows that fertility has not changed during the past 20 years in most of the countries studied. Thus fertility seems to have been stationary during the period of reference in Benin, Côte d'Ivoire, Ghana, Kenya, Lesotho, Mauritania, Rwanda and Senegal.

On the other hand, fertility trend seems to be downward in the three Arab countries included in the study, namely: Egypt, Morocco and Tunisia. The current fertility of women aged between 30 and 34 year thus decreased by about one child between the 15-19 year period and the five-year period prior to each one of the surveys. Such a drop in fertility was attributed to the rise in age at first marriage, the decline in legitimate fertility rates and the use of "modern" methods of contraception 3/.

3/ United Nations, ECA, Population Growth and Assessment of Family Planning Programmes in Africa, Addis Ababa, February

In Cameroon, there appears to have been a recent rise in fertility levels. Such increases in fertility should be expected in other African countries such as the Congo, Gabon, Zaire, the Sudan and the Central African Republic where there are pockets of high sterility as in Cameroon. The rise in fertility will be the outcome of a combination of many factors such as the drop in primary sterility and the drop in intra-uterine mortality linked to the development of basic health care and the improvement in the standards of living of the people 4/.

Apart from such specific data, the continent's adolescent fertility (below 20 years) seems to be declining. Data are lacking to confirm this trend which should, however, be realistically as a result of the objectives pursued by African Governments, such as urbanization and modernization, wide-spread education, the development of female employment and the improvement of the economic role and social status of women.

The decline in fertility at young ages will probably not result in a decline in completed fertility. Indeed, in countries where such a decline has been observed, it has been accompanied by a rise in fertility at the oldest age brackets; this rise is linked to the reduction in the intervals between successive births and the rise in the age at monopause with the completed fertility remaining roughly the same.

4. Determinants of fertility

Demographic literature contains many studies on the social, cultural or religious factors to determine the levels and trends of fertility.

Thus, the high levels of fertility prevailing in Africa might be the outcome of a preference for a large number of children particularly boys; early and almost universal marriage; the low level of instruction of women; the occupational status of women which does not hamper their reproductive role and of economic contribution expected and desired of children 5/.

The findings of the World Fertility Survey shows the considerable efforts that need to be made with respect to campaigns to encourage people to have smaller families. According to the findings, about 80 per cent of married and fertile women in Africa want to have additional children, have never used contraception and do not intend to use contraception in future.

Although the levels of fertility observed in Africa are high according to most standards, they are well below the biological maximum, ie, the levels that would have been attained if reproduction was not controlled by natural means, pathological causes or simply by human decisions or actions.

Although it is unrealistic to draw up a pattern of the continent's reproductive behaviour because of the extreme diversity of cultures in Africa, some broad generalizations can be made on variables for controlling fertility in African countries.

4/ United Nations, ECA, Fertility Levels, Trends and Factors in Cameroon, Kenya and Senegal, Addis Ababa, February 1985.

Since in most cases very few modern means of fertility regulation are used, the essential factors of fertility control on the continent are mainly the result of traditional fertility control mechanisms. These are prolonged breast feeding, prolonged sexual abstinence after childbirth, abstinence from sexual intercourse (caused for example by separation of the married couple: labour migration, divorce, widowhood, polygamy) an earlier end to fertile life as a result for exemple of no longer having sexual relations after becoming a grandmother

These natural fertility control factors are mainly responsible for maintaining the levels of reproduction in Africa at 6 to 7 births per woman which is well below the potential fertility of arcund 15 to 16 births per woman 6/.

5. Conclusion

Studies on fertility levels and trends have invariably led to the conclusion that fertility will remain high and stable in most African countries while it might even probably increase in others. The result will be a rise in the proportion of young people which in itself is a factor for accelerating the future population growth of the continent.

Many factors have determined the fertility levels and trends observed in Africa; one of the most crucial of these appears to be the pro-natalist attitude of Africans.

African Governments recognized in the Kilimanjaro Plan of Action on Population (Arusha, 1984) that the levels of fertility on the continent are one of the most serious demographic problems that currently hamper the development of the African region.

It is, therefore, recommended that African Governments should seek appropriate solutions to the continent's demographic problems and give priority to drawing up a coherent population policy in order to attain growth rates that are in line with the objectives of economic growth and social development. The Kilimanjaro Plan of Action is explicit on this point since in the definition of principles and objectives it requests African Governments "to promote the formulation and implementation of comprehensive population policies which provide lasting solutions to the major problems of high mortality and fertility, uneven population distribution, growing unemployment, stagnation of living standards and unequal income distribution".

With specific reference to policies aimed at reducing fertility in Africa, it is recommended that African Governments should adopt the following specific measures:

6/ Bongaart (J), 1982 - The Proximate Determinants of Natural Fertility In Determinants of Fertility in Developing Countries - A Summary of Knowledge - Buffalo et Lee Eds - National Academy Press, Washington.

(a) Improving the social status and economic role of women by developing particularly wage-earning employment for women in urban areas and carrying out at the same time a vigorous policy of economic reforms for the benefit of rural women;

(b) Embarking upon publicity campaigns to upgrade traditional fertility control methods in particular encouraging a return to prolonged breast feeding;

(c) Increasing the age at first marriage for both women and men and;

(d) Waging publicity campaigns with respect to the notion of "responsible parenthood" and encouraging the use of «modern» methods of contraception to bring about a decline in legitimate fertility.